REMARKS

35 U.S.C. § 102(b) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 5,428,244 to Segawa et al.

Claims 23 through 33 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Segawa et al. (U.S. Patent No. 5,428,244). Applicants respectfully traverse this rejection, as hereinafter set forth.

Segawa et al. fails to disclose a non-crystalline metallic silicide film, especially a non-crystalline metallic silicide film included with an operable gate stack. Instead, Segawa et al. disclose "the crystallization of the [tungsten silicide] film 4" in the Segawa et al. structures. *See, Segawa et al.* at col. 14, lines 2-3. In light of Segawa et al's disclosure, the *Official Action's* statement that "a non-crystalline metallic silicide film (4)" is disposed over a polysilicon layer of an operable gate stack is wrong. Segawa et al. explicitly states that the tungsten silicide film (4) is crystallized.

Furthermore, the interpretation of the *Official Action* "that the temperature required to anneal tungsten silicide to become crystalline is higher than 850 °C" indicates that the Segawa et al. structures are crystalline. During the formation of the structures of Segawa et al., "a heat treatment is carried out at 850 °C to 950 °C for...the crystallization of the WSix film 4." *See, Segawa et al.* at col. 14, lines 1-3. It is irrelevant that "the metallic silicide film is formed at temperature between 500 to 600 °C," because the final structures of Segawa et al. undergo a heat treatment to crystallize the tungsten silicide film within those structures. Thus, the operable structures of Segawa et al. include a crystallized metallic silicide film.

Although it may be inherent that non-crystalline metallic silicide films do not contain silicon clusters, it is not inherent that the Segawa et al. structures do not contain silicon clusters because the final structures of Segawa et al. are crystallized. In addition, it is not inherent that the dielectric layers of Segawa et al. are substantially devoid of pitting because the Segawa et al. structures include a crystalline metallic silicide film.

Claim 23 specifically recites "an operable gate stack, including a non-crystalline metallic silicide film." (Emphasis added). The operable structures of Segawa et al. have undergone a heat treatment to crystallize any metallic silicide films therein. Thus, Segawa et al. fails to teach an operable gate stack that include a non-crystalline metallic silicide film. Even if an intermediary form of a metallic silicide film disclosed by Segawa et al. is non-crystalline, Segawa et al. fails to disclose an operable structure that lacks a crystalline metallic silicide film. This failure precludes the anticipation rejection of claim 23 because the identical invention, an operable gate stack with a non-crystalline metallic silicide film, is not shown in as complete detail as claimed by claim 23. *See, Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

The same arguments apply to claims 25 and 27. Both claims 25 and 27 claim an operable gate stack that includes "a non-crystalline metallic silicide film." Any operable gate stack disclosed by Segawa et al. includes a crystalline metallic silicide film, as clearly recited by Segawa et al. The failure of Segawa et al. to expressly or inherently describe an operable gate stack having a non-crystalline metallic silicide film precludes the anticipation rejection of claims 25 and 27. *See, Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

Claims 24 and 28 each recite an operable gate stack that includes "an amorphous metallic silicide film" that is substantially devoid of silicon clusters. Segawa et al. does not disclose an amorphous metallic silicide film. Nor does Segawa et al. ever mention an amorphous metallic silicide film. The failure of Segawa et al. to disclose the identical invention as that claimed by claims 24 and 28 precludes the present anticipation rejection. *See, Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

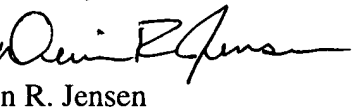
Claim 26 recites "an operable gate stack on a dielectric layer, over a silicon substrate, wherein said dielectric layer is substantially devoid of pitting." Segawa et al. fails to disclose a dielectric layer that is devoid of pitting and therefore fails to anticipate claim 26. *See, Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

As with claims 23 through 28, claims 29 and 33 claim operable structures. In the case of claims 29 through 33, the operable structures are semiconductor devices. All of the operable structures taught by Segawa et al. include crystallized metallic silicide films. The failure of Segawa et al. to disclose an operable structure having a non-crystallized metallic silicide film precludes the anticipation rejection of claims 29, 30 and 32 which specifically claim a non-crystalline metallic silicide film. Furthermore, Segawa et al.'s failure to disclose a semiconductor device with "an amorphous silicide film substantially devoid of silicon clusters" (Claim 33) or a semiconductor device where a "dielectric layer is substantially devoid of silicon clusters" (Claim 31) precludes an anticipation rejection of those claims. Thus, claims 29 through 33 are allowable over the present anticipation rejection.

CONCLUSION

Claims 23 through 33 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully Submitted,



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